



Overview

Algeria is the largest natural gas producer and second largest oil producer, after [Nigeria](#), in Africa. It became a member of the Organization of the Petroleum Exporting Countries (OPEC) in 1969, shortly after it began oil production in 1958. Currently, the country is heavily reliant on its hydrocarbon sector, which accounted for almost 70 percent of government budget revenue and grants and about 98 percent of export earnings in 2011, according to the International Monetary Fund.

In recent years, crude oil production has been stagnant, while natural gas production has gradually declined, because new production and infrastructure projects have repeatedly been delayed. Additionally, in the last three licensing rounds there has been limited interest from investors to undertake new oil and gas projects under the government's current terms. As a result, the Algerian parliament recently approved amendments to the current hydrocarbon law and introduced fiscal incentives to entice foreign companies to take on new ventures, particularly exploration in offshore areas and in areas onshore that contain shale resources.

The recent militant attack on the In Amenas gas facility prompted security concerns about operating in Algeria's remote areas, particularly in the south. Any major disruption to Algeria's hydrocarbon production would not only be detrimental to the local economy but, depending on the scale of lost production, could affect world oil prices. Also, since Algeria is the fourth largest natural gas supplier to Europe, unplanned cuts to natural gas output could affect some European countries. Natural gas and oil account for almost all of Algeria's total energy consumption, and the country consumes very small amounts of hydro power, coal, and traditional biomass.



Source: U.S. Department of State

Oil and gas sector organization

Algeria's national oil and gas company, Sonatrach, dominates the country's hydrocarbon sector, owning roughly 80 percent of all hydrocarbon production. By law, Sonatrach is given majority ownership of oil and gas projects in Algeria.

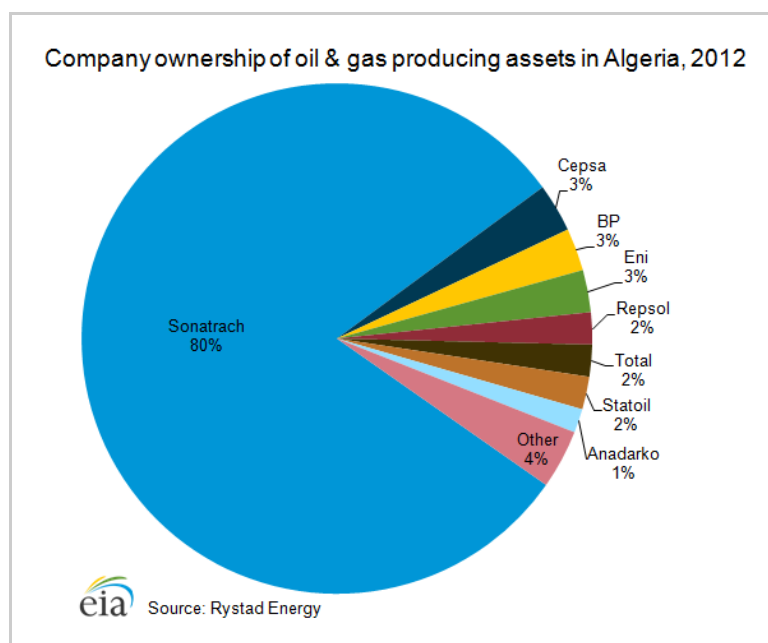
Algeria's oil and gas industry is governed by the Hydrocarbon Act of 2005. The initial legislation established terms that guided the involvement of international oil companies (IOCs) in upstream exploration and production, midstream transportation, and the downstream sector. The original 2005 legislation was more favorable to foreign involvement than its predecessor, which was passed in 1986. However, amendments to the bill were made in 2006 that reversed some of those favorable terms. In the 2006 amendments, Algeria's national oil company, Entreprise Nationale Sonatrach (Sonatrach), was granted a minimum equity stake of 51 percent in any hydrocarbon project, and a windfall profits tax was introduced for IOCs.

In 2012, Algeria began revising the hydrocarbon law in an attempt to attract foreign investors to new projects. The parliament approved the amendments in January 2013. Amid declining hydrocarbon production and stagnant reserves, the Algerian government has stated it needs foreign partners to increase oil and gas reserves and explore new territories, such as offshore in the Mediterranean and areas containing shale oil and gas resources. The amendments, however, do not change Sonatrach's majority stake requirement, but include changes to the tax structure and offer greater fiscal incentives to companies investing in offshore exploration and unconventional resources.

Sonatrach owns roughly 80 percent of total hydrocarbon production in Algeria, while IOCs account for the remaining 20 percent, according to data from Rystad Energy. IOCs with

notable stakes in oil and gas fields are: Cepsa (Spain), BP (United Kingdom), Eni (Italy), Repsol (Spain), Total (France), Statoil (Norway), and Anadarko (United States). Sonatrach's substantial assets in Algeria make it the largest oil and gas company not only in the country, but also in Africa. The company operates in several parts of the world as well, including: Africa (Mali, Niger, Libya, Egypt), Europe (Spain, Italy, Portugal, United Kingdom), Latin America (Peru), and the United States.

Over the last few years, Algeria has experienced difficulties attracting foreign investors, particularly at licensing rounds. In the country's seventh licensing round in 2008, only 4 of the available 16 blocks were awarded, 3 out of 8 in 2009, and 2 out of 10 in 2011. Some analysts believe that the lack of fiscal incentives to attract foreign investors to new projects, coupled with past Sonatrach corruption allegations, were to blame. Algeria's precarious security environment has also been a concern for investors.



Security risks

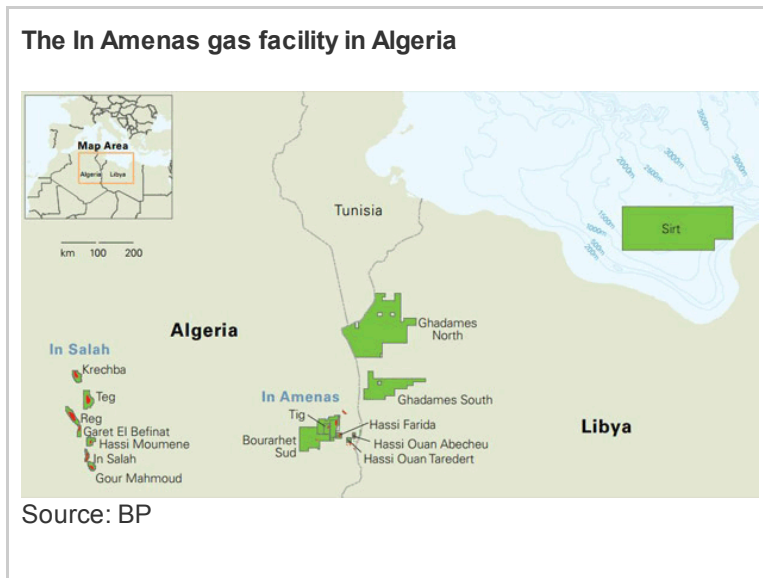
Militant groups operating in North Africa and the Sahel have presented security risks to oil and gas installations in the region. In January 2013, a militant group stormed Algeria's In Amenas gas facility, resulting in several casualties and a temporary suspension of gas production.

Concerns over Algeria's security environment resurfaced on January 16, 2013 when a militant group attacked the In Amenas gas facility, resulting in over 60 worker and militant casualties. The attack reportedly damaged two of the facility's three processing trains, of which each has the capacity to process 3 billion cubic meters per year (bcm/y). Output at In Amenas was partially restarted at the end of February 2013 at one of the three trains. The Algerian government claims that production losses from In Amenas were offset by increases in production at other gas fields.

The In Amenas gas processing facility is jointly operated by Sonatrach, BP, and Statoil and is located near the Libyan border. In 2011 and 2012, In Amenas output averaged 7.8 bcm/y of natural gas, accounting for 10 percent of Algeria's total natural gas production, according

to the Middle East Economic Survey (MEES). Natural gas liquids (NGL) are also produced at the In Amenas fields and averaged 43,400 barrels per day (bbl/d) in 2012, although nameplate capacity is around 60,000 bbl/d.

The In Amenas attack has prompted companies to review their security at oil and gas installations in Algeria and other North African countries. The Algerian government said it will increase security presence at all of its oil and gas facilities, particularly those in the remote south.



Oil

Algeria had 12.2 billion barrels of proven oil reserves, as of January 1, 2013. All of the proven oil reserves are held onshore, since there has been limited offshore exploration. The government recently approved amendments to Algeria's hydrocarbon law that included fiscal incentives for foreign companies to invest in untapped exploration areas, particularly offshore and in areas believed to contain unconventional resources.

According to the *Oil & Gas Journal* (OGJ), Algeria held an estimated 12.2 billion barrels of proven oil reserves, as of January 1, 2013, the third largest reserves in Africa (behind Libya and Nigeria). All of the country's proven oil reserves are held onshore, because there has been limited offshore exploration. The majority of proven oil reserves are in the Hassi Messaoud province, which contains the country's largest oil field, Hassi Messaoud, located in the eastern part of the country, near the Libyan border.

According to Sonatrach, about 66 percent of Algerian territory remains unexplored or largely underexplored. Most of these areas are in the north and offshore. Over the last few years, Sonatrach has directed exploration efforts toward those areas, and the Algerian government recently passed amendments to its current hydrocarbon law, which included fiscal incentives to entice foreign companies to explore those areas. Along with underexplored areas, there is still potential to expand field production in areas that have already been exploited, particularly in the Hassi Messaoud, Illizi, and Berkin basins. According to Sonatrach, the Hassi Messaoud-Dahar province contains about 71 percent of the country's combined proven, probable, and possible oil reserves, while the Illizi basin, the second

largest area, contains about 15 percent. The Illizi and Berkine basins have been home to many discoveries since the 1990s and still hold significant potential.

Production and development

The country produced 1.87 million bbl/d of total petroleum liquids in 2012, which includes crude oil, condensate, natural gas liquids, and refinery processing gain. The three largest oil fields, Hassi Messaoud, Ourhoud, and Hassi Berkine, contribute to about half of total crude oil production, which averaged 1.25 million bbl/d in 2012.

Algeria produced an estimated average of 1.25 million barrels per day (bbl/d) of crude oil in 2012, about the same as the previous year. Combined with 280,000 bbl/d of condensate and 340,000 bbl/d of NGLs, which are not included in its OPEC quota, Algerian total oil production averaged 1.87 million bbl/d in 2012.

Algerian oil fields produce high-quality light crude oil with very low sulfur and mineral content. Sonatrach operates the largest oil field in Algeria, Hassi Messaoud, which produced between 350,000 to 400,000 bbl/d of crude oil in 2012, or about 30 percent of Algeria's total crude output. The second and third largest oil fields, Ourhoud and the Hassi Berkine complex, are located in the Berkine basin. In 2012, Ourhoud produced between 150,000 to 200,000 bbl/d of crude, and the Hassi Berkine complex produced between 100,000 to 150,000 bbl/d of crude. The three largest oil fields in Algeria combined contributed roughly half of the country's total crude oil production.

Algeria's largest oil fields are mature and have begun to decline. Field expansions and enhanced oil recovery techniques have kept the country's oldest fields at a steady rate of production, but this trend is slowly starting to reverse. As a result, EIA and consulting firms such as PFC Energy and Rystad Energy project that Algeria's crude oil output will gradually decline at least in the short term. There are new oil projects coming on line, along with additional output from existing fields (Gassi Touil-Rhoude Nouss and Hassi Messaoud), but the amount is expected to fall short of what is needed to offset natural declines, particularly in the short term.

Table 1: Upcoming oil projects in Algeria

Project name	Partners	Output (thousand bbl/d)	Year
El Merk	Anadarko/Sonatrach	100-150	2013
Gassi Touil-Rhoude Nouss QH	Sonatrach	30	2013
Bir Seba	PetroVietnam/Sonatrach/PTTEP	20	2014
Takouazet (East & West)	Rosneft-Stroytransgaz	40-60	2014
Hassi Messaoud (Hassi Ferfa + Hassi Dzabat)	Sonatrach	75	2014

Production at El Merk recently started.

PTTEP is PTT Exploration and Production of Thailand.

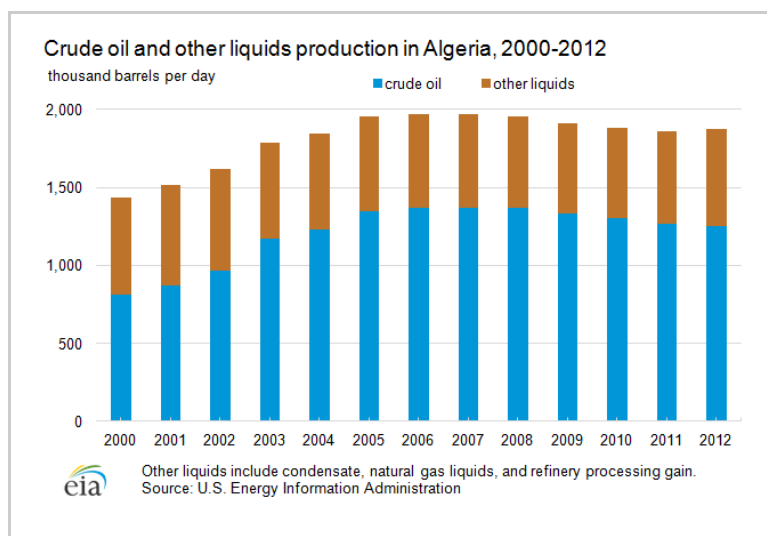
Bir Seba will initially produce 20,000 bbl/d, but capacity may be increased to

36,000-40,000 bbl/d in its second phase, which may be completed in 2016.

Source: OPEC Secretariat, Global Insight, Arab Oil & Gas Directory, Rystad, and Anadarko

El Merk is a crude oil and condensate field located south of Hassi Messaoud in the Sahara desert. Production recently started at the field. Eventually, El Merk is expected to bring on stream between 100,000 to 150,000 bbl/d of crude oil, condensate, and liquefied petroleum gas (LPG). Sonatrach and Anadarko managed the project, and other companies involved were Eni, ConocoPhillips, Talisman Energy, and Maersk Oil. The project was technically difficult to develop because the reservoirs were located in multiple blocks held by different operators and consortia, according to the Arab Oil and Gas Directory.

The Bir Seba development project is located northeast of Hassi Messaoud and consists of five fields, according to the Arab Oil and Gas Directory. Both oil and gas will be extracted from the complex. Output is anticipated to start in mid-2014 at an initial rate of 20,000 bbl/d and capacity may be increased to 36,000 to 40,000 bbl/d in the second phase, if it is undertaken. The Takouazet (East & West) development is located in the Illizi basin and is anticipated to come on line in 2014, although some analysts estimate the start date at 2015. Output estimates for Takouazet range from 40,000 to 60,000 bbl/d of oil.



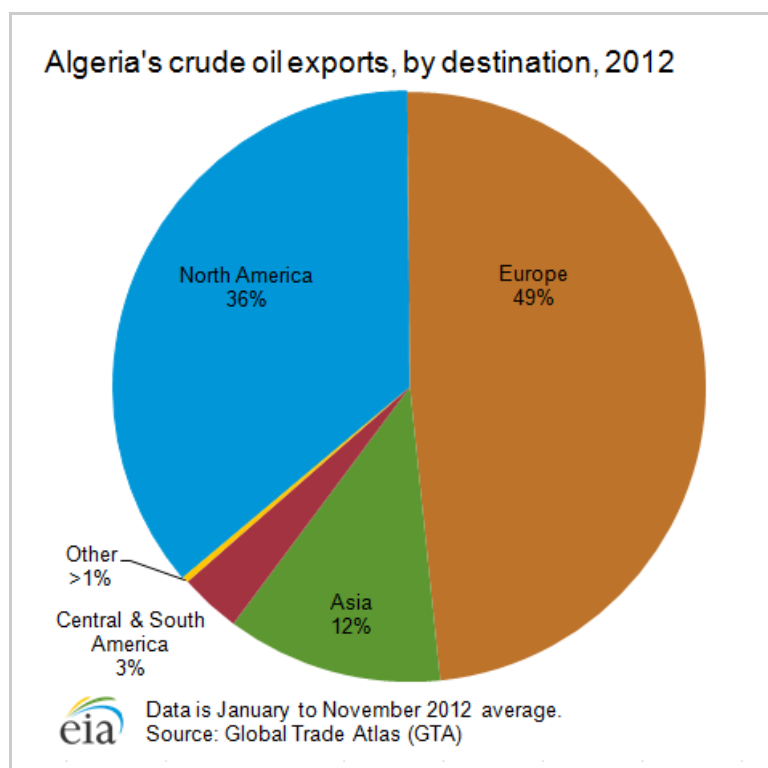
Crude oil exports

The vast majority of Algerian crude oil exports, roughly 85 percent, are sent to Europe and North America. The United States is the single largest destination; however, U.S. imports of Algerian crude oil have substantially declined over the last five years.

Algeria exports various grades of mostly light crude, the main grade being the Sahara blend, which is a blend of crudes produced at fields in the Hassi Messaoud region. From 2010 to 2012, Algerian annual crude oil exports averaged slightly below 800,000 bbl/d, although annual estimates vary slightly among trade data sources, such as Global Trade Atlas (GTA) and APEX Tanker Data (Lloyd's List Intelligence). Most of Algeria's crude oil exports are sent to Europe (49 percent) and North America (36 percent).

The United States has been one of Algeria's single largest markets for crude oil for almost a decade, but U.S. crude oil imports from the Algeria have substantially declined in the last five years. The United States imported about 120,000 bbl/d of crude oil from Algeria in 2012,

which is down from its peak of 443,000 bbl/d in 2007. The growth in light crude oil production in the United States has contributed to this decline.



Refined petroleum products output, consumption, and exports

Algeria has five crude oil refineries and one condensate refinery, with a total nameplate capacity of 562,000 bbl/d. Although the refineries collectively often operate below capacity, the country typically produces a surplus of refined products because domestic consumption is lower than refinery output. The surplus is exported mostly to the United States, Europe, and Brazil.

Algeria has five crude oil refineries and one condensate refinery with a total nameplate capacity of 562,000 bbl/d. The country's largest refinery, Skikda, is located along Algeria's northern coastline and is the largest refinery in Africa. It has the capacity to process 300,000 bbl/d of crude oil and accounts for more than half of Algeria's total refinery capacity. Skikda processes the Saharan blend, which derives from the Hassi Messaoud oil fields. Algeria's two other coastal refineries, Arzew and Algiers, each have the capacity to process 60,000 bbl/d of crude oil. The country's inland refineries, Hassi Messaoud and Adrar, are connected to local oil fields and supply oil products to nearby areas.

Table 2: Oil refineries in Algeria

Refinery	Capacity (thousand bbl/d)	Planned additions	Type	Owner
Skikda	300	32	Crude Oil	Sonatrach/Naftec
Arzew	60	30	Crude Oil	Sonatrach/Naftec
Algiers	60	20	Crude Oil	Sonatrach/Naftec
Hassi	30	--	Crude Oil	Sonatrach/Naftec

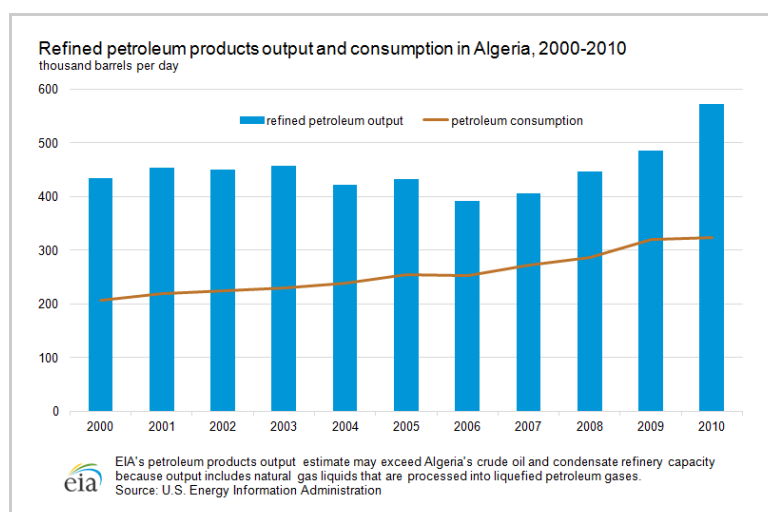
Messaoud				
Adrar	12	--	Crude Oil	CNPC/Sonatrach
Skikda	100	--	Condensate	Sonatrach/Naftec
Total	562	82		

Source: Sonatrach, Oil & Gas Journal, Business Monitor International, and China National Petroleum Corporation (CNPC)

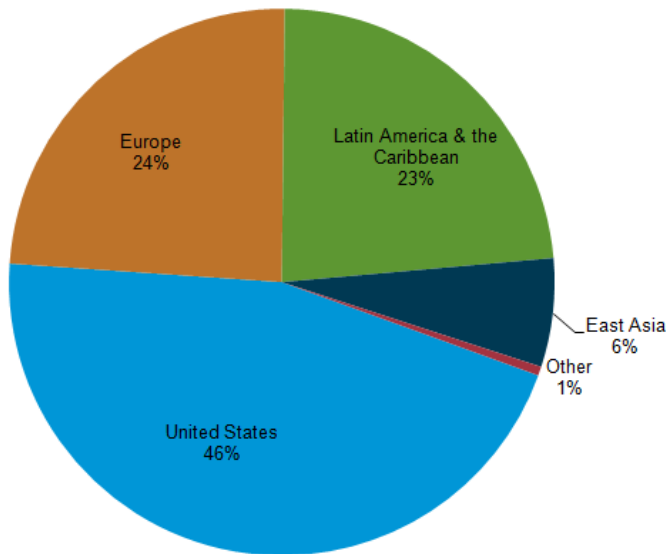
Sonatrach plans to boost refinery output by expanding the capacity at all three coastal refineries, Skikda, Arzew, and Algiers, by a total of 82,000 bbl/d. In addition, the company recently announced plans to construct four new refineries by 2018. The refineries would be located in Biskra, Tiaret, Ghardaia, and Hassi Messaoud, with a proposed capacity of around 100,000 bbl/d each.

Algeria's petroleum consumption has gradually increased over the past decade to 330,000 bbl/d in 2011 from slightly over 200,000 bbl/d in 2000. The vast majority of its oil consumption derives from domestically refined products. Although domestic consumption falls well below refinery output, Algeria also imports a small amount of products. In 2012, the country imported about 25,000 bbl/d of oil products on average, mainly from Italy, Russia, France, and Libya, according to preliminary estimates from Global Trade Atlas.

In 2010, Algeria processed slightly more than 570,000 bbl/d of petroleum products, which included petroleum products derived from crude oil, condensate, and NGL. Algeria typically produces a surplus of refined petroleum products, which over the last decade has ranged from almost 130,000 to 250,000 bbl/d. The United States has been one of Algeria's largest export destinations for petroleum products. In 2012, the United States received slightly less than half of Algeria's total product exports, and the remainder was sent to Europe (24 percent), Latin American and the Caribbean (23 percent), East Asia (6 percent), and various other countries (1 percent).



Algeria's petroleum products exports, by destination, 2012



Data are January to November 2012 average.
Source: Global Trade Atlas (GTA)

Pipelines and export terminals

Algeria uses seven coastal terminals to export crude oil, refined products, LPG, and NGL. These facilities are located at Arzew, Skikda, Algiers, Annaba, Oran, Bejaia, and La Skhirra in Tunisia. Algeria's domestic pipeline network facilitates the transfer of oil from interior production fields to coastal infrastructure. The most important pipelines carry crude oil from the Hassi Messaoud field to refineries and export terminals. Algeria does not have any transcontinental export oil pipelines.

Natural gas

Algeria produced 2.9 trillion cubic feet (Tcf) of dry natural gas in 2011. Production has steadily declined since 2005 as the country's large and mature fields are depleting. There are a host of new projects planned to come on line, but they have repeatedly been delayed, and some are dependent on the construction of new infrastructure.

According to OGJ, as of January 2013, Algeria had 159.1 trillion cubic feet (Tcf) of proven natural gas reserves, the ninth largest natural gas reserves in the world and the second largest in Africa after Nigeria. Algeria's largest natural gas field, Hassi R'Mel, was discovered in 1956. Located in the center of the country to the northwest of Hassi Messaoud, it holds proven reserves of about 85 Tcf, more than half of Algeria's total proven natural gas reserves. The remainder of Algeria's natural gas reserves come from associated fields (alongside crude oil reserves) and non-associated fields in the south and southeast regions of the country.

Algeria also holds vast untapped shale gas resources. According to an [EIA-sponsored study](#) released in April 2011, Algeria has 231 Tcf of technically recoverable shale gas resources. The Ghadames Basin, located in eastern Algeria, southern Tunisia, and northwestern Libya, was identified as a major shale gas basin in the assessment. In 2011,

Eni and Sonatrach signed a cooperation agreement to develop unconventional resources, with particular focus on shale gas, and to assess technical and commercial feasibility. Shell and ExxonMobil have also held talks with Sonatrach about exploiting shale resources.

Production and development

Algeria's gross natural gas production was 6.7 Tcf in 2011, of which 3.1 Tcf (47 percent) was reinjected for enhanced recovery at oil fields and wet gas fields. The remainder of gross natural gas produced is marketed (3.5 Tcf) or flared/vented (0.1 Tcf). Dry natural gas (occurring when associated liquid hydrocarbons are removed) was 2.9 Tcf in 2011, of which 1.1 Tcf was consumed locally and 1.8 Tcf was exported.

Dry natural gas production declined after 2005 as some of Algeria's largest and mature gas fields, Hassi R'Mel, Rhourde Nouss, Alrar, and Hamra, began to deplete. Algeria is planning to bring on stream a host of new natural gas fields to compensate for the loss from mature fields, but many of these projects have been delayed by several years mostly because of delayed government approval, difficulties attracting investment partners, infrastructure gaps, and technical problems. The most recent natural gas project to come on line is the Menzel Ledjimet East (MLE) led by Eni. Production at MLE started in early 2013, one year behind schedule.

Table 3: Upcoming natural gas projects in Algeria

Project name	Partners	Output (Bcf/y)	Start year
Gassi Touil	Sonatrach	tbd	2014+
In Salah (expansion)	BP/Sonatrach	200	2015
Reggane Nord	Repsol/Sonatrach	102	2016
Timimoun	Total/Sonatrach	57	2016
Touat	GDF Suez/Sonatrach	159	2016
Ahnet	Total/Sonatrach	100-150	2016
Hassi Ba Hamou	BG Group/Sonatrach	70-100	2016+
Isarene (Ain Tsila)	Petroceltic/Sonatrach	tbd	2017

Billion cubic feet per year is Bcf/y.

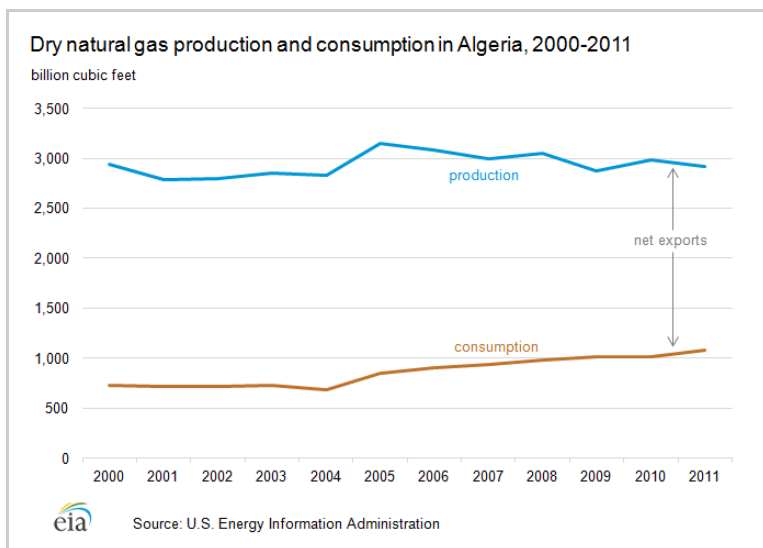
Field expansion at In Salah is to ensure that the current level of output at In Salah is maintained.

Other gas fields that are expected to begin production between 2018 and 2020 are Hassi Mouina, Zerafa, Djebel Hira, Tinhert, Bourarhet, and field expansion at Haoud Berkaoui. Source: Arab Oil & Gas Directory, Global Insight, Repsol, Total, Oxford Energy, Oil & Gas Journal, and Bloomberg

Algeria is in the process of developing its Southwest Gas Project, which includes the Reggane Nord, Timimoun, and Touat projects, all of which are expected to start in 2016, two years later than previously planned. The Repsol-led Reggane Nord project consists of developing six fields and is expected to reach a plateau production rate of 102 Bcf/y. The Timimoun project, led by Total in partnership with Sonatrach and Cepsa, is expected to reach peak production of 57 Bcf/y, and the Touat project, led by the France-based GDF Suez in association with Sonatrach, is projected to reach peak output of 159 Bcf/y. The Southwest Gas Project entails the construction of gas gathering facilities, a gas treatment plant, and a pipeline to the Hassi R'Mel gas hub, called the GR5 pipeline. The planned infrastructure will

connect the remote Southwest gas fields to the Hassi R'Mel region and allow for the commercialization of other fields in the south as well. The development and commercialization of the Ahnet natural gas project in the south will also be dependent on the new infrastructure.

Following a recent decline in natural gas production and upstream licensing activity, the development of gas from the southwest has taken on greater importance for Algeria's natural gas output to meet contracted exports, along with the expected growth in domestic demand. Natural gas production in the country will most likely continue to steadily decline in the short term, but it may recover in the medium term if planned projects come on line and offset natural declines. Output from the Southwest Gas Project, new projects at Gassi Touil, Hassi Ba Hamou, Isarene (Ain Tsila), Hassi Mouina, Zerafa, Djebel Hira, Tinhert, and Bourarhet, and field expansion projects at In Salah and Haoud Berkaoui could bring on stream over 1 trillion cubic feet per year (Tcf/y) after 2018. However, these projects are contingent on attracting investors and filling infrastructure gaps.



Midstream and downstream infrastructure

Algeria exports natural gas via pipelines and on tankers in the form of liquefied natural gas (LNG). It has three transcontinental export gas pipelines; two transport natural gas to Spain and one to Italy. It has three LNG complexes, two in Arzew and one in Skikda. Algeria was the first country in the world to export LNG in 1964.

Domestic pipelines

Algeria's domestic natural gas pipeline system transports natural gas from the Hassi R'Mel fields and processing facilities, owned by Sonatrach, to export terminals and liquefaction plants along the Mediterranean Sea. There are three main domestic pipeline systems: Hassi R'Mel to Arzew, Hassi R'Mel to Skikda, and Alrar to Hassi R'Mel. The Hassi R'Mel to Arzew system is a collection of pipelines that move natural gas from Hassi R'Mel to the export terminal and LNG plant at Arzew. The system also includes an LPG pipeline. The Hassi R'Mel to Skikda system transports natural gas from the Hassi R'Mel fields to the Skikda LNG plant, and the Alrar to Hassi R'Mel system transports natural gas produced in the Alrar and southeast region to Hassi R'Mel processing facilities. Sonatrach plans to build the GR5 Southwest fields to Hassi R'Mel pipeline to monetize natural gas reserves in fields

discovered in southwest Algeria. The expected completion date is 2016.

Transcontinental pipelines

Algeria has three transcontinental export gas pipelines; two transport natural gas to Spain and one to Italy. The largest pipeline, Pipeline Enrico Mattei (GEM), came on line in 1983 and runs 1,023 miles from Algeria to Italy via Tunisia. According to Sonatrach, its capacity is 1.2 Tcf/y and it is jointly owned by Sonatrach, the Tunisian government, and Eni. The Pedro Duran Farell (GPDF) pipeline started in 1996 and travels 324 miles to Spain via Morocco. GPDF's capacity is about 414 Bcf/y. The newest pipeline, MEDGAZ, came on line in 2011 and is owned by Sonatrach, Cepsa, Endesa, Iberdrola, and GDF Suez. It stretches 125 miles onshore and offshore, from Algeria to Spain via the Mediterranean Sea.

Table 4: Algeria's transcontinental natural gas pipelines

Pipeline name	Start year	Route	Length (miles)	Capacity (Bcf/y)
Pipeline Enrico Mattei (GEM)	1983	Algeria to Italy via Tunisia	1,023	1,170
Pedro Duran Farell pipeline (GPDF)	1996	Algeria to Spain via Morocco	324	410
MEDGAZ Pipeline	2011	Algeria to Spain via the Mediterranean Sea	125	282
Planned Pipelines				
GALSI Pipeline	--	Algeria to Italy	534	282
Trans-Saharan Gas Pipeline (TSGP)	--	Nigeria to Algeria via Niger (link to MEDGAZ)	2,602	706-1,059

Billion cubic feet per year is Bcf/y.

The GALSI Pipeline is initially planned to hold 282 Bcf/y of natural gas and may eventually double in capacity.

The MEDGAZ link was identified as the favorable route in a past feasibility study, but this may change in the future.

Source: Sonatrach (with EIA conversions) and Global Insight

Planned transcontinental pipelines

Algeria plans to develop two additional transcontinental export pipelines, although both have suffered delays, and start dates are uncertain. The GALSI pipeline is planned to transport natural gas to Italy via a pipeline with a subsea section. Initially, its capacity is expected to be 286 Bcf/y, but it will eventually double. Currently, it is undergoing feasibility studies to determine the subsea route and commercial viability. The Trans-Saharan Gas Pipeline (TSGP) is planned to run slightly over 2,600 miles to deliver natural gas from Warri, Nigeria to Algeria (via Niger), which will then link to the MEDGAZ route to Spain, although this link may be changed in the future. However, security concerns about militant groups across remote areas in the Sahel, in addition to growth constraints to Nigerian natural gas production, present considerable downside risks to investors interested in financing the project.

Liquefied natural gas (LNG) plants

Algeria became the world's first LNG producer in 1964 when the Arzew LNG plant came on

line. Algeria now has three LNG complexes, two in Arzew and one in Skikda, according to Sonatrach. Sonatrach just completed the construction of a new LNG train at Skikda. The 4.5-million tons per annum (Mmtpa) train replaced the units that were destroyed in a fire in 2004. Sonatrach is building another LNG train at Arzew, with a planned capacity of 4.7 Mmtpa, to process natural gas output from the upcoming Gassi Touil project. The LNG project has suffered delays attributed to cost overruns and is expected to come on line in 2014 or 2015.

Natural gas pipeline and liquefied natural gas (LNG) exports

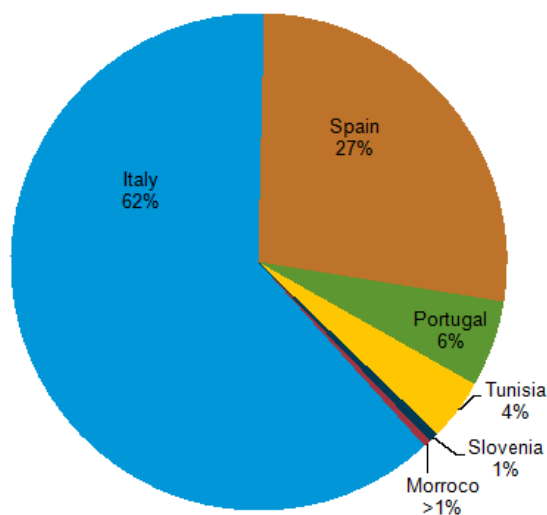
Most of Algerian pipeline gas and LNG exports are sent to countries in the European Union, making it the group's fourth largest natural gas supplier.

Algeria exported 1.8 Tcf of natural gas in 2011, either through pipelines or via tankers in the form of LNG. Natural gas exports have gradually declined after 2005, as production began to decrease and consumption began to increase. Government delays to approve production and infrastructure projects are cited as reasons for the recent decline. Hence, Algeria is facing pressure to boost natural gas output with new projects and bring on line new infrastructure to meet growing domestic demand and fulfill long-term contractual obligations to export natural gas to Europe, Algeria's largest export destination. In 2011, Algeria was the European Union's fourth largest natural gas supplier, after Russia, Norway, and the Netherlands.

Algeria exported 1.2 Tcf of natural gas via pipelines in 2011, accounting for almost 70 percent of total natural gas exports. Italy was the single largest recipient of Algerian pipeline exports (62 percent), with the remainder of exports to Europe going to Spain (27 percent), Portugal (6 percent), and Slovenia (1 percent). Outside of Europe, Algeria sent small amounts to its neighbors, Tunisia (4 percent) and Morocco (less than 1 percent).

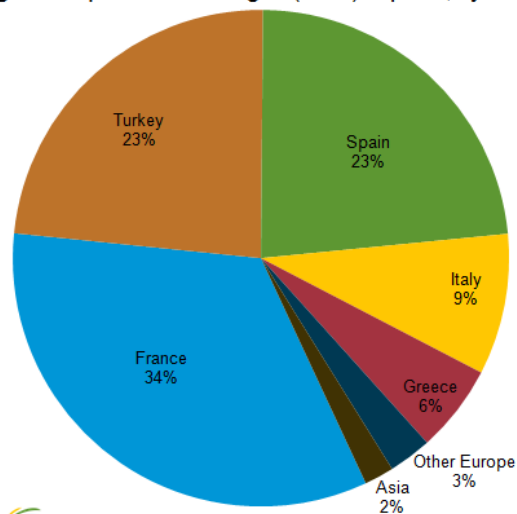
In 2011, Algeria was the world's seventh largest exporter of LNG, exporting about 5 percent of the world's total. The country exported slightly less than 13 Mmtpa of LNG, almost all of which went to Europe and a small amount to Asia. France was the single largest destination (34 percent), followed by [Turkey](#) (23 percent), Spain (23 percent), Italy (9 percent), and Greece (6 percent). In Asia, [India](#) and [Japan](#) received a combined 2 percent of Algeria's total LNG exports.

Algerian natural gas pipeline exports, by destination, 2011



Percentages do not add to 100 due to rounding.
Source: BP Statistical Review, June 2012

Algerian liquefied natural gas (LNG) exports, by destination, 2011



Source: BP Statistical Review, June 2012

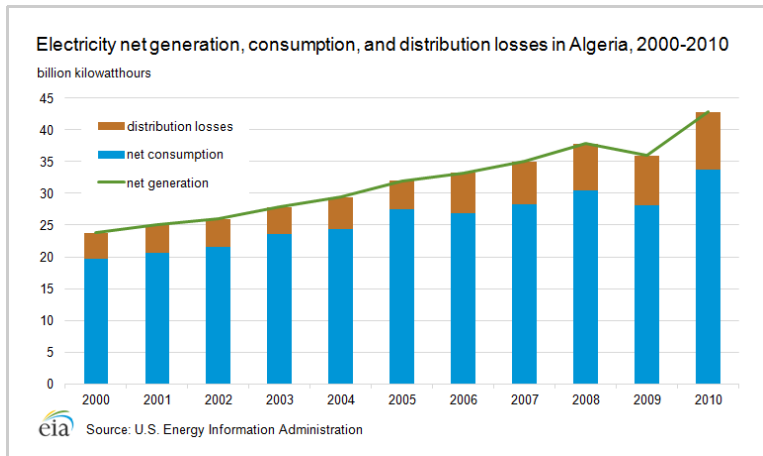
Electricity

Currently, more than 99 percent of Algeria's electricity generation comes from fossil-fuel sources. The Algerian government recently adopted a renewable energy program that aims to produce 40 percent of its domestically consumed electricity from renewable energy sources by 2030.

Algeria generated 42.8 billion kilowatthours (KWh) of power in 2010. Almost all (more than 99 percent) was fossil fuel electric generation, and less than 1 percent was hydroelectricity. According to the Electricity and Gas Regulation Commission (CREG), the country's electricity and gas market regulator, the national electricity system consists of an interconnected network that distributes power to northern and southern parts of the country. About 99 percent of the Algerian population is connected to the national grid.

Electricity consumption has grown by an annual average of 6 percent from 2000 to 2010. In

2010, consumption grew by almost 20 percent compared to the previous year. The government has brought additional capacity on line to keep up with demand needs, but it has imposed rationing in the past to balance supply and demand. In both 2003 and 2012, the government enforced power cuts that provoked public protest. Soneglaz, the country's public utility company, plans to boost capacity by 8,000 megawatts (MW) by constructing nine natural gas-fired power plants by 2016, according to IHS Global Insight. Although the country will continue to rely on natural gas as a feedstock in the short-to-medium term, the government recently unveiled plans to diversify its fuel sources with renewable energy.



Renewable energy

Algerian power demand is expected to more than double by 2030. In turn, the government is attempting to reduce the country's dependence on hydrocarbons in the long term because almost all of Algeria's energy demand is met by hydrocarbons, mostly natural gas. The government's plan is to introduce renewable energy into the local power market to save volumes of natural gas for export to finance the national economy. As a result, the Renewable Energy and Energy Efficiency Program, adopted in 2011, aims to produce 40 percent of domestically consumed electricity from renewable energy sources by 2030.

The Renewable Energy program places a large emphasis on solar power because the potential for wind, biomass, geothermal, and hydropower sources is lower. The program aims to achieve 37 percent of national electricity production from solar energy by 2030, with the remaining 3 percent from wind-powered plants. The program aims to install 22,000 MW of power generating capacity from renewable sources by 2030, of which 10,000 MW of capacity would provide power for export, preferably to the European market.

Notes

- Data presented in the text are the most recent available as of May 20, 2013.
- Data are EIA estimates unless otherwise noted.

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